

AMENDMENTS TO THE CLAIMS

Claims 1-18 (Cancelled).

19. (Currently amended) A method for operating a first pixel cell of an imager, the method comprising:

    accumulating charge at a photoconversion device during an integration period;

    resetting a charge collection region with a reset transistor during a reset period, wherein said integration period and said reset period occur while a row select transistor in the first pixel cell is activated;

    storing accumulated charge from said photoconversion device at said charge collection region via a transfer transistor;

    reading out said charge from said charge collection region; and

    removing residual charge remaining in said photoconversion device after said charge storage at said charge collection region, wherein said act of removing comprises activating said reset transistor and said transfer transistor prior to a subsequent integration period.

20. (Original) The method of claim 19, wherein said act of removing comprises activating said reset transistor and said transfer transistor substantially simultaneously.

21. (Previously presented) The method of claim 20, wherein said substantially simultaneous activation of said reset transistor and said transfer transistor occurs after said act of reading out said charge.

22. (Original) The method of claim 19, wherein said act of transferring comprises transferring charge from said photoconversion device to a supply voltage Vdd.

23. (Original) The method of claim 19, wherein the imager is a CMOS imager.

24. (Original) The method of claim 23, wherein the CMOS imager comprises one of a four transistor, five transistor, six transistor or seven transistor pixel architecture.

25. (Original) The method of claim 19, wherein said photoconversion device is a photodiode.

26. (Original) The method of claim 19, wherein said photoconversion device is a photogate.

27. (Original) The method of claim 19, wherein said photoconversion device is a photoconductor.

Claims 28-65 (Cancelled).

66. (Currently amended) The method of claim 19, wherein said reset period is just immediately prior to said integration period.

67. (Previously Presented) The method of claim 19, wherein reading out said charge from said charge collection region comprises operating a transistor for reading out said charge as a pixel signal to a read-out circuit.

68. (Previously presented) The method of claim 67, further comprising storing said pixel signal in a sample and hold circuit.

69. (Previously Presented) The method of claim 20, wherein activating said reset transistor and said transfer transistor substantially simultaneously comprises applying a reset signal to activate a gate of said reset transistor, and while said reset transistor is activated, applying a transfer signal to activate a gate of said transfer transistor.

70. (Previously Presented) The method of claim 69, wherein said reset transistor is de-activated before said transfer is deactivated.

71. (Previously Presented) The method of claim 69, wherein said transfer transistor is de-activated before said reset transistor is deactivated.

72. (Previously Presented) The method of claim 20, wherein activating said reset transistor and said transfer transistor substantially simultaneously comprises applying a transfer signal to activate a gate of said transfer transistor, and while said transfer transistor is activated, applying a reset signal to activate a gate of said reset transistor.

73. (Withdrawn) A method of operating an imager, the method comprising:

resetting a plurality of pixels in a pixel array during a reset period, said pixel array comprising a plurality of pixels arranged in rows and columns, each pixel comprising a photoconversion device, a reset transistor, a charge storage region, a transfer transistor and a readout transistor;

applying incident light to said pixel array during a first integration period such that said photoconversion devices convert said applied light to charges;

transferring said charges from said photoconversion devices to a respective charge storage region;

reading out a signal from each pixel representing an amount of said transferred charges in said charge storage region; and

removing residual charge remaining in said photoconversion device by activating said reset transistor and said transfer transistor prior to a second integration period.

74. (Withdrawn) The method of claim 73, wherein reading out a signal from each pixel comprises reading out each row of pixels of said array sequentially onto respective column lines.

75. (Withdrawn) The method of claim 73, wherein removing residual charge remaining in said photoconversion device by activating said reset transistor and said transfer transistor prior to a second integration period is done simultaneously for every pixel in said array.

76. (Withdrawn) The method of claim 73, wherein removing residual charge remaining in said photoconversion device by activating said reset transistor and said transfer transistor prior to a second integration period is done row by row for every row in the array.

77. (Withdrawn) The method of claim 73, wherein during said reset period, a signal representing a reset condition is read out from every pixel in the array.

78. (New) The method of claim 19, wherein the act of removing residual charge occurs while the row select transistor is activated.

79. (New) The method of claim 19, wherein the act of removing residual charge occurs while the row select transistor is not activated.

80. (New) The method of claim 19, wherein a second pixel cell in an adjacent row than said first pixel cell has a different integration period than said first pixel cell.